



# RARE OR THREATENED SPECIES FROM INLAND WATERS OF TASMANIA, AUSTRALIA

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Rare or threatened species of aquatic biota in inland waters of Tasmania, Australia, are recorded and discussed. This is the first such list for a major region of Australia. The present study reports 39 species of which 34 are endemic to Tasmania: 1 plant; 4 molluscs; 14 crustacea (6 syncarids, 1 branchiuran, 5 isopods, 1 amphipod, 1 decapod); 15 insects (3 Odonata, 3 Plecoptera, 1 dipteran, 8 Trichoptera); 5 fish. In some insect and crustacean orders, e.g. Ephemeroptera and Amphipoda, a taxonomic impediment exists to defining species and hence their conservation status; the distributions of many other species are poorly known. However, greatest numbers of the above species are found in the Central Faunal Province (14 spp.) and the South-west Province (14 spp.). Threats to these species include impoundment of waters; drainage of lakes; removal of riparian vegetation; urban waterway pollution; and introduction of Brown Trout *Salmo trutta*. The proposed re-introduction of Atlantic Salmon *Salmo salar* to Tasmania should be a cause for concern. Conservation measures include fishing restrictions on the giant crayfish *Astacopsis gouldi* and the Derwent Whitebait *Lovettia sealii* but as yet there is little Federal or State legislation to protect aquatic invertebrates or native fish.

## INTRODUCTION

The need for a list of species at risk in inland waters of Tasmania has arisen because of public concern about the possible destruction of inland habitats resulting from hydro-electric developments and forestry activities; increased interest in native fish and invertebrates; concern about further proposed introduction of salmonid fishes; recognition that endemic species at risk in Tasmania are at risk for the whole world and obligations to the international scientific community to provide data on the status of our aquatic biota.

In the following discussion, terminology for categories of conservation status follows International Union for Conservation of Nature (1983) viz.:

Extinct (Ex) — Taxa not definitely located in the wild during the last 50 years.

Endangered (E) — Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating.

Vulnerable (V) — Taxa believed likely to move into the 'Endangered' category in the near future if the causal factors continue operating.

Rare (R) — Taxa with small world populations that are not at present 'Endangered' or 'Vulnerable' but are at risk.

Insufficiently known (K) — Taxa that are suspected but not definitely known to belong to any of the above categories, because of lack of information.

The flora of Tasmanian inland waters contains a few endemic macrophytes but the phytoplankton is largely cosmopolitan. However, the fauna is of great biogeographical interest because of the number of endemic animals [Williams 1974; Neboiss 1977, 1981] including galaxiid fishes (McDowall 1980).

The Tasmanian biota is threatened by pollution, land clearance, soil erosion and construction of dams for the generation of hydro-electricity. Detailed treatment of the conservation of Australian inland waters and their biota was given by Lake (1980) and, with regard to forestry practices particularly in Tasmania, by Michaelis (1984.) Rare or threatened Australian plants were listed by Leigh, Briggs and Hartley (1981) and included 18 aquatic macrophytes of which 2 are found in Tasmania.

The conservation status of the Australian insect fauna was studied by Key (1978) but no aquatic insects from Tasmania were mentioned. In a list of Australian animals at risk, Ride and Wilson (1982a, b) drew heavily on W. D. William's data and recorded 11 aquatic species from Tasmania (Table 1) and Williams (1983a) mentioned 22 Tasmanian aquatic species requiring conservation (Table 1). The IUCN Invertebrate Red Data Book (1983) presented 8 aquatic species known from Tasmania (of a total of 14 Australian aquatic species) as a result of contributions by 6 Australian authors (Table 1). There was some agreement between the species listed by IUCN (1983) and Williams (1983a).

The most complete listing to date, by Michaelis (1984) and Table 1, mentioned 31 aquatic species requiring conservation in Tasmania, and recorded 24 endemic species as rare or potentially endangered.

The present paper synthesises existing records of the conservation status of the Tasmanian aquatic biota. It forms part of a long-term field study, commenced in 1981, to investigate the possible effects of forest operations on Tasmania's inland waters.

## RESULTS

A revised list of aquatic species in Tasmania considered by the author to be rare, endangered or vulnerable is presented in Table 2 and includes 34 species endemic to Tasmania of a total listing of 39 species. Of the plants, *Isoetes gunnii* which was listed by Michaelis (1984) and *Nymphoides exigua* of Leigh *et al.* (1981) and Williams (1983a) were not retained. Of the animal species advanced by Ride and Wilson (1982b), Williams (1983a) and IUCN (1983), 8 out of 11 species, 16 out of 20 species and 8 out of 8 species respectively were retained by the author in the present report. Species deleted were *Glacidorbis pedderi*, *Coxiella striata*, *Lovettia sealii* and *Gadopsis marmoratus* (refer below). The main deficiencies in these previous listings, when compared with Michaelis (1984) and the present study, were in the isopods, molluscs and (where applicable) fish. A total of 21 species not included in the previous 3 lists referred to above have now been added by Michaelis (present study). This list will surely increase as many Australian species in nature become taxonomically understood and man's modification of inland waters continues.

Of the plants, *Nymphoides exigua* is not now considered rare although it is not common in Tasmania (A. E. Orchard, pers. comm.). However, *Callitriche brachycarpa* is retained as rare with four known localities (A. E. Orchard, pers. comm.), and there are other species in this genus whose distribution requires further study.

Of the invertebrates, the hydrobiid mollusc *Glacidorbis pawpela*, known only from Great Lake, is retained as rare (R. Kershaw, pers. comm.). Williams (1983a) stated that *G. pedderi* was known only from the lower Gordon River (and formerly Lake Pedder) but it is known from a very few [sic] widespread localities (Smith and Kershaw 1981) and is not retained.

The entire known Tasmanian population of *Coxiella striata* was considered endangered by Williams (1983a) on the basis of its Folly's Lagoon location (an inland saline lagoon) but Smith and Kershaw (1981) reported it from many coastal saline lagoons and it is not retained in the revised listing.

The planorbid mollusc *Ancylastrum cumingianus* is retained as endangered following the IUCN (1983) entry by B. J. Smith and both hyriid molluscs, *Velesunio meretonicus* and *Hyridella narracanensis*, known only from the South Esk catchment, are retained as rare in Tasmania although *H. narracanensis* is known from the southern Australian mainland.

There is agreement between all four authors that the five species of Tasmanian Anaspid Crustaceans are rare or vulnerable (Table 1) and again following IUCN (1983) entries by Swain, four of the five species are retained as vulnerable. It should be noted, however, that *Anaspides tasmaniae*, figured on the front cover of the *Records of the Queen Victoria Museum*, is the most widespread of the Anaspides. *Koonunga cursor*, whilst not endemic to Tasmania, is retained on the list, pending consideration by IUCN (Williams 1983a), and taxonomic revision.

The branchiuran *Dolops tasmanianus*, mentioned by Michaelis (1984), is known only from Lake Surprise, 2.5km south of Lake Pedder (Fryer 1969) and is listed as rare.

The four endemic species of phreatoicid isopod, known only from Great Lake (Fulton 1983) were mentioned by Michaelis (in press) and are here listed as rare, along with the non-endemic *Haloniscus searlei* known from about four localities (Ride and Wilson 1982a, Williams 1983b).

The amphipod, *Paracalliope larai*, is known only from the Dip River, north-west Tasmania (Knott 1975) and is here included in a list of rare species for the first time.

In the aquatic insects, the dragonfly *Synthemiopsis gomphomacromioides* mentioned by Williams (1983a) is added to the two species previously listed by Michaelis (1984) based on the detailed records by Allbrook (1979).

Three species of Plecoptera are here recorded as rare (Table 2). *Eusthenia reticulata* is undoubtedly the rarest of the Tasmanian Eustheniidae with one locality record in recent times from Dacrydium Creek, summit of Mt. McCall (Hynes in press). In the genus *Kimminsoperla* (Notonemouridae), *K. biloba* is known only from the King William saddle (Illies 1975, Hynes in press) and *K. williamsi* was reported from two localities by Illies (1975) and appears rare in spite of six further locality records (Hynes in press). Four undescribed species mentioned by Hynes (in press) may be rare but are not included in Table 2.

The Tasmanian Torrent Midge *Edwardsina tasmaniensis* has been the subject of discussion. Its type locality of the (South) Esk River, Launceston, presumably Cataract Gorge, was altered by diversion for hydro-electricity in 1956 and the species was described as extinct [sic] (Zwick 1981). However, it is now known to occur in the south west of Tasmania and the IUCN (1983) entry could perhaps be modified from endangered to vulnerable.



The eight species of Trichoptera retained in Table 2 are based on the adult records of A. Neboiss (1977, and pers. comm.) and collections of larvae of these species to identify habitat requirements are urgently needed. *Taskiria mccubbini* and *Taskiropsyche lacustris* have not been recorded since the flooding of Lake Pedder and should be entered in the IUCN listing as endangered in the sense of possibly extinct.

Of the vertebrates, five species of fish are recorded (Table 2), together with the authors from whose distribution records the conservation status was derived: *Paragalaxias mesotes* (McDowall and Frankenburg 1981, Fulton 1982b), *Galaxias tanycephalus* and *G. johnstoni* (McDowall and Frankenburg 1981); *G. fontanus* (Fulton 1978); *Prototroctes maraena* (Bell et al. 1980). The three species of *Galaxias* were considered potentially endangered by Michaelis (in press) and are recorded here as vulnerable.

The distribution and/or abundance of Derwent Whitebait *Lovettia sealii* has been considerably reduced since the advent of European man in Australia (Ride and Wilson 1982a, Williams 1983a). As the species is not endangered (McDowall 1980) or considered rare (W. Fulton, pers. comm.), it is not retained in Table 2. The River Blackfish *Gadopsis marmoratus* has been regarded as vulnerable (Williams 1983a). Its range has been considerably reduced but it is still common in many areas (Jackson and Llewellyn 1980) and is not included in Table 2.

No Tasmanian species of frogs are under any immediate threat. Aquatic reptiles are not naturally found in Tasmania and platypus and eastern water rat are widespread and apparently secure. The endemic subspecies of the Azure Kingfisher *Ceyx azureus diemenensis*, which breeds in a hole drilled in the river bank, was considered vulnerable to streamside forestry activity (Michaelis 1984). Although widespread, it is not common.

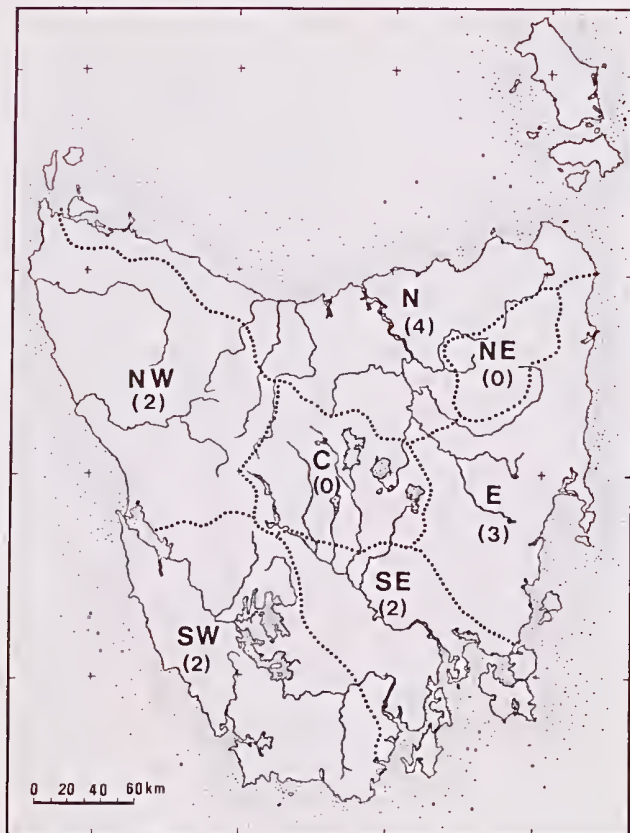
## DISCUSSION

The present study highlighted the inadequacy of the IUCN (1983) listing with regard to aquatic invertebrates of the Australian region. Tasmanian records are far from complete and there are no listings from New Guinea, Lord Howe Island or New Zealand although several species are known to be rare, e.g. *Rakiura vernalis* (Trichoptera: Helicopsychidae) in New Zealand. Australasian limnologists should be encouraged to contribute to the IUCN Conservation Monitoring Programme to rectify the situation.

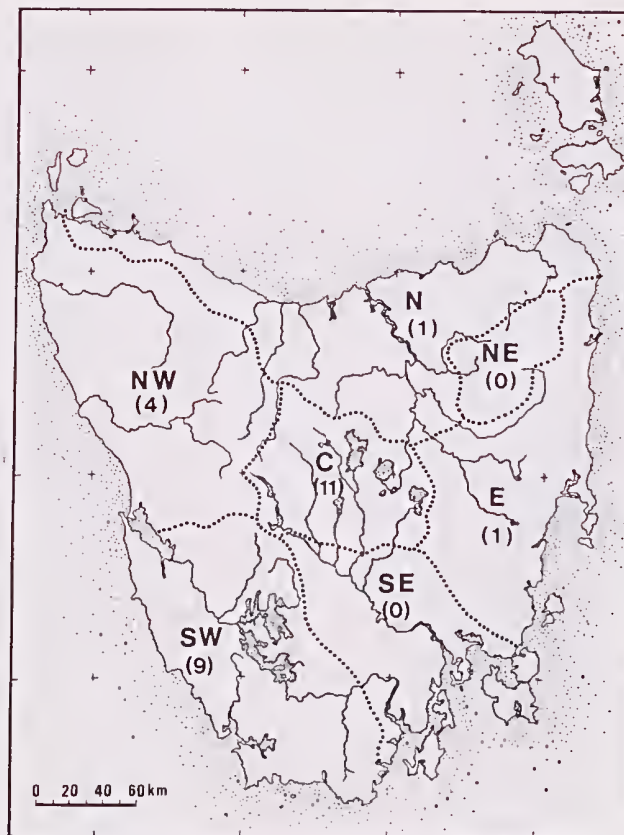
The aquatic arthropods are important components of many Tasmanian freshwater ecosystems but insect conservation studies suffer a taxonomic impediment (Taylor 1976) to progress. Few of the larvae of the Trichoptera endemic to Tasmania (more than 70% of the total of 165 known species, Neboiss 1981) have been described and taxonomic resolution of the Tasmania Ephemeroptera and Orthocladine chironomids is low. The amphipods and parastacids in the genera *Engaeus*, *Geocharax* and *Parastacoides* are imperfectly known. The fact that no Ephemeroptera or minor orders of aquatic insects are listed here should not imply that there are no rare or endangered species but simply that further taxonomic research is urgently required.

There must be concern at loss of genetic variation when reduction in range occurs for non-endemic species. There are several species whose security as a whole is not in doubt because they are widespread on the Australian mainland but the known Tasmanian part of the population is rare, e.g. Freshwater mussel *Hydridella narracanensis*, isopod *Haloniscus searlei*, Syncarid crustacean *Koonunga cursor*, Dragonfly *Synthemis macrostigma orientalis* and the Southern grayling *Prototroctes maraena*. Their distributions by faunal province are shown in Fig. 1.

The distribution of these rare, vulnerable or endangered endemic species is interesting. However, the floristic regions numbered by Leigh et al. (1981) do not correspond exactly to the



**Fig. 1**  
Occurrence by faunal province of the five rare species in Tasmania that are not endemic. Faunal provinces after Neboiss (1977).



**Fig. 2**  
Number of rare, endangered or vulnerable endemic species confined to one faunal province of Tasmania arranged according to province. Faunal provinces after Neboiss (1977).

faunal provinces of Neboiss (1977). When arranged according to faunal province of current records, the greatest number of plant and animal species is found in the Central Province (14 species) and the South West Province (14 species). When species endemic to Tasmania and restricted to one faunal province are considered, the same pattern emerges (Fig. 2). The greatest number of species are recorded from the Central Province (11 species) then the South West (9 species) followed by the North West (4 species) and the North and East (1 species each). No species were recorded only from the North East nor the South East. This pattern may reflect the areas of greatest endemism of the Tasmanian aquatic fauna e.g. Trichoptera in the North West, South West and Central Provinces (Neboiss 1977) or it may be an artefact due to the long term interest in the Central Plateau region; recent collecting in the South West prompted by hydro-electric developments; or the relative inaccessibility of the North West region.

In spite of the lack of knowledge, two main reasons have been advanced for the reduction in range of these aquatic animals: habitat destruction and introduced predators.

The removal of vegetation along streams has been recognised as a factor contributing to the decline of Southern Grayling *Prototroctes maraena* (McDowall 1976) and the giant crayfish *Astacopsis gouldi* [Riek 1981 unpublished, cited by IUCN (1983)].

Dam construction for hydro-electric schemes has been blamed for the presumed extinction of the Tasmanian blepharocerid midge *Edwardsina tasmaniensis* at its type locality Esk River, Launceston (presumably Cataract Gorge on the South Esk River) (Zwick 1981) by diversion of water; alterations in water level in Great Lake could effectively eliminate *Paranaspides lacustris* (Fulton 1982a); construction of impoundments may have contributed to the decline of *Prototroctes maraena* (Bell *et al.* 1980). Drainage of inland saline lagoons for agricultural purposes could affect the status of inland populations of the snail *Coxiella striata* and habitat destruction by urban waterway pollution continues even in rural Tasmania threatening the locality of *Haloniscus searlei* (Williams 1983b).

Introduced predators have been held responsible for the decline of many species in Tasmania. Brown Trout *Salmo trutta* has been implicated in the decline of the Tasmanian syncarid crustacean *Anaspides tasmaniae* (Knott, Suter and Richardson 1978), Swan River galaxias *Galaxias fontanus* (Fulton 1978) and Southern Grayling *Prototroctes maraena* (McDowall 1976). Fears are held for the remaining population of *Galaxias fontanus* if Brown Trout are introduced to the Swan River headwaters above Hardings Falls (Fulton 1978). The introduced Brook Char (or Brook Trout) *Salvelinus fontinalis* (Mitchill) persists as a viable population only in Clarence Lagoon where the Clarence galaxias *G. johnstoni* is considered endangered (McDowall and Tilzey 1980). It is for these reasons that the author is concerned about the impending re-introduction of the Atlantic Salmon *Salmo salar* to Tasmania.

Man has overfished two species leading to fishing restrictions being imposed by the Inland Fisheries Commission for the giant crayfish *Astacopsis gouldi* and the commercial fishery being closed for the Derwent whitebait *Lovettia sealii* (McDowall 1980).

There is a need to conserve aquatic habitats for the protection of endangered species. Project Aqua was an attempt by the International Biological Programme to list the significant inland waters of the world proposed for conservation. For Australia in 1970, only standing waters were proposed and included seven Tasmanian lake regions and one wetland. By contrast, the New Zealand entries included a cold spring, a thermal reserve, thermal and temperate lakes and rivers. This difference reflected the range of limnological studies in New Zealand at that time compared to Australia, as well as the significance of the waters. Urgent steps are needed to record and adequately reserve a variety of Australia's running waters e.g. cave streams, temporary streams, mound springs and large rivers.



In Tasmania, a reserve was established at Caroline Creek in 1968 to study *Astacopsis gouldi* and it is intended that a reserve will be proclaimed over part of the upper Swan River in conjunction with a proposed flora reserve (W. Fulton, pers. comm.). These aquatic reserves extend on either side of the river but do not secure the catchment from disturbance. Unfortunately, sites within National Parks are not automatically protected from disturbance by the Hydro Electric Commission e.g. Lake St. Clair in Lake St. Clair-Cradle Mountain National Park; Lake Pedder formerly in Lake Pedder National Park but now flooded and bordered by the Southwest National Park, Southwest Conservation Area and land vested with the Hydro Electric Commission.

There is a need to protect the species discussed above directly. No endangered aquatic invertebrates have yet been scheduled by Commonwealth (or State) legislation. In Tasmania, 12 species of cave-adapted invertebrates are wholly protected under the Wildlife Regulations 1971 of the National Parks and Wildlife Act 1970 (Parliament of Tasmania 1971) thus setting a precedent for such legislation.

As for the endangered fish, the Southern Grayling *Prototroctes maraena* is one of three freshwater fish species currently included on the Council of Nature Conservation Ministers (CONCOM) official list of Australian Endangered Vertebrates (Attachment A), under the Wildlife Protection (Regulation of Exports and Imports) Act 1982. In Tasmania, the grayling has long been scheduled as a protected fish (Parliament of Tasmania, Inland Fisheries Regulations 1973). It is the only Tasmanian inland fish with that status; the other four galaxiid species in Table 2 have no legislative protection.

The platypus *Ornithorhynchus anatinus* is wholly protected and the water rat is partly protected in Tasmania under the Wildlife Regulations 1971 of the National Parks and Wildlife Act 1970 (Parliament of Tasmania 1971).

A discussion of whether these species are adequately conserved is beyond the scope of the present study. However, until basic research is carried out on their biology, conservation measures suggested will be based on intuition rather than knowledge.

The apparent lack of communication between scientists in preparing previously published lists of rare and endangered animals species necessitated this synthesis, which will be useful to biogeographers as well as those concerned with managing the aquatic environment. With time, there will be a need to revise this list, and further suggestions and amendments would be welcomed by the author. It is hoped this paper will stimulate the production of similar lists for other regions of Australasia.

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**Table 1**

Conservation Status of aquatic macrophytes, invertebrates and vertebrates in Tasmania, taken from various authors. Endangered (E), Vulnerable (V), Rare (R), Species discussed but not assigned a rarity value are ticked (✓); species endemic to Tasmania are marked with an asterisk (\*); Not Applicable (NA).

Species	Leigh, Briggs and Hartley (1981)	Author		
		IUCN (1983)	Williams (1983a)	Michaelis (1984)
Plantae				
Isoetaceae				
* <i>Isoetes gunnii</i>		NA		R
Menyanthaceae				
* <i>Nymphoides exigua</i>	V	NA	V	
Callitricheaceae				
<i>Callitriche brachycarpa</i>	✓	NA	✓	
Invertebrata				
Mollusca: Hydrobiidae				
* <i>Glacidorbis pedderi</i>	NA	*	E	
* <i>G. pawpela</i>	NA			R
<i>Coxiella striata</i>	NA		E	
Mollusca: Planorbidae				
* <i>Ancylastrum cumingianus</i>	NA	E		R
Mollusca: Hyriidae				
* <i>Velesunio moretonicus</i>	NA			R
<i>Hyridella narracanensis</i>				
Crustacea: Syncarida				
* <i>Allanaspides helonomus</i>	NA	V	V	R
* <i>A. hickmani</i>	NA	V	V	R
* <i>Anaspides spinulae</i>	NA	V	V	R
* <i>A. tasmaniae</i>	NA	V	V	R
* <i>Paranaspides lacustris</i>	NA	V	V	R
<i>Koonunga cursor</i>	NA		V?	✓
Crustacea: Branchiura				
* <i>Dolops tasmanianus</i>	NA			✓
Crustacea: Isopoda				
* <i>Mesacanthotelson setosus</i>	NA			✓
* <i>Onthotelson brevicaudatus</i>	NA			✓
* <i>O. spatulatus</i>	NA			✓
* <i>Uramphisopus pearsoni</i>	NA			✓
<i>Haloniscus searlei</i>	NA		E	
Crustacea: Decapoda				
* <i>Astacopsis gouldi</i>	NA	V	V	✓
Insecta: Odonata				
* <i>Archipetalia auriculata</i>	NA		at risk	R
* <i>Synthemopsis</i>				
<i>gomphomacromioides</i>	NA	*	at risk	
<i>Synthemis macrostigma</i>				
<i>orientalis</i>	NA			R
Insecta: Diptera				
* <i>Edwardsina tasmaniensis</i>	NA	E	E	
Insecta: Trichoptera				
* <i>Taskiria mccubbini</i>	NA		at risk	V

Species	Leigh, Briggs and Hartley (1981)	Author		
		IUCN (1983)	Williams (1983a)	Michaelis (1984)
* <i>Taskiropsyche lacustris</i>	NA		at risk	V
* <i>Archaeophylax vernalis</i>	NA		at risk	
* <i>Westriplectes pedderensis</i>	NA		E	R
* <i>Stenopsychodes lineata</i>	NA			R
* <i>Tasmanoplegas spilota</i>	NA			R
* <i>Nanoplectus truchanasi</i>	NA			R
* <i>Ramiheithrus kocinus</i>	NA			R
Vertebrata: Pisces				
* <i>Paragalaxias mesotes</i>	NA	NA		R
* <i>Galaxias tanycephalus</i>	NA	NA		E
* <i>G. johnstoni</i>	NA	NA		E
* <i>G. fontanus</i>	NA	NA		E
* <i>Lovettia sealii</i>	NA	NA	✓	
<i>Prototroctes maraena</i>	NA	NA	V	R
<i>Gadopsis marmoratus</i>	NA	NA	V	



Table 2

Rare, endangered or vulnerable species of macrophytes, invertebrates and vertebrates from inland waters of Tasmania. Endemic species are marked with an asterisk (\*).

Family/Species	Common Name	Distribution	Status in Tasmania
PLANTAE			
Callitricaceae			
* <i>Callitriche brachycarpa</i>	Starwort	North, north-west and south-west	Rare
INVERTEBRATA			
Mollusca: Hydrobiidae			
* <i>Glacidorbis pawpela</i>		Great Lake	Rare
Mollusca: Planorbidae			
* <i>Ancylastium cumingianus</i>		Great Lake, Lake St. Clair	Endangered
Mollusca: Hyriidae			
* <i>Vesunio moretonicus</i>		South Esk catchment	Rare
<i>Hyridella narracanensis</i>		South Esk catchment and southern mainland	Rare
Crustacea: Syncarida	Anaspid		
	Crustaceans		
* <i>Allanaspides helonomus</i>		Lake Pedder and 6.5 km north	Vulnerable
* <i>A. hickmani</i>		6.5 km north of Lake Pedder	Vulnerable
* <i>Anaspides spinulae</i>		Lake St. Clair	Vulnerable
* <i>A. tasmaniae</i>		Widely distributed in alpine and sub-alpine waters	
* <i>Paranaspides lacustris</i>		Great Lake, Shannon Lagoon, Penstock Lagoon, Woods Lake, Arthurs Lake	Rare
		Northern Tasmania	Vulnerable
<i>Koonunga cursor</i>			Rare
Crustacea: Branchiura			
* <i>Dolops tasmanianus</i>			Rare
Crustacea: Isopoda			
* <i>Mesacantholeus setosus</i>		Great Lake	Rare
* <i>Ontholeus brevicaudatus</i>		Great Lake	Rare

Family/Species	Common Name	Distribution	Status in Tasmania
* <i>O. spatulatus</i>			
* <i>Uramphiscopus pearsoni</i>		Great Lake	Rare
<i>Haloniscus searlei</i>		Great Lake	Rare
Crustacea: Amphipoda		Inland saline lagoons	Rare
* <i>Paracalliope larai</i>			
Crustacea: Decapoda:			
* <i>Astacopsis gouldi</i>		Dip River	Rare
	Giant Freshwater Crayfish	North coast	Vulnerable
Insecta: Odonata			
* <i>Archipetalia auriculata</i>		Montane regions and lower altitudes in west	Rare
* <i>Synthemiusopsis gomphomacromioides</i>		Swampy button grass plains	Rare
<i>Synthemis macrostigma orientalis</i>		Montane swamps	Rare
Insecta: Plecoptera			
Eutheniidae			
* <i>Eusthenia reticulata</i>		Mt. McCall	Rare
Notonemouridae			
* <i>Kimminsoperla biloba</i>		King William Saddle	Rare
* <i>K. williamsi</i>		Lake Dove, 30 km west Hobart	Rare
Insecta: Diptera:			
* <i>Edwardsina tasmaniensis</i>		South-west	Vulnerable
Insecta: Trichoptera			
Kokiriidae			
* <i>Taskiria mccubbinii</i>		Lake Pedder	Endangered
* <i>Taskiropsyche lacustris</i>		Lake Pedder	Endangered
Limnephilidae			
* <i>Archaeophylax vernalis</i>		Lake Pedder	Rare
Leptoceridae			
* <i>Westriplectes pedderensis</i>		South-west	Rare

Family/Species	Common Name	Distribution	Status in Tasmania
Stenopodichthidae			
* <i>Stenopodichthys lineata</i>		North-west	Rare
Polycentropodidae			
* <i>Tasmanopodichthys spilota</i>		North-west and south-west	Rare
Plectrocentridae			
* <i>Nanoplecticus truchanasi</i>		South-west	Rare
Philorhynchidae			
* <i>Ramiroichthys kochius</i>		North-west	Rare
Vertebrata: Pisces			
Protoscyridae			
<i>Protoscyris maraena</i>	Southern Grayling	Tasmania: eastern and southern Australia	Rare <sup>a</sup>
Galaxiidae			
* <i>Paragalaxias mesotes</i>	Arthur's Paragalaxias	Arthurs Lake, Woods Lake	Rare
* <i>Galaxias tanycephalus</i>	Saddled Galaxias	Arthurs Lake, Woods Lake	Endangered
* <i>G. johnstoni</i>	Clarence Galaxias	Clarence River and Lagoon	Endangered
* <i>G. fontanus</i>	Swan Galaxias	Swan River headwaters	Endangered

p. 14